



Commencement-of-Operations Inspection for Wind Energy Converters

In prevalent terms of contract, the risk passes to the operator/investor after a successful trial operation of the delivered converter plant. Specialists from **SV-Veltrup** carry out the commencement-of-operations inspections on commission from the operators/investors, the manufacturer and the finance companies, in order to verify that the contractual obligations with respect to the technical aspects are fulfilled and that no defects preventing the go-ahead of operations exist. The result is a written report (a so-called inspection report), which lists all unsettled points and, as a rule, verifies that the WEC is free of substantial defects.

Goal

The primary concern of the commencement-of-operations inspection is to document the condition of the newly installed and operating WEC before acceptance by the buyers/operators. It should verify whether:

- the official requirements are met,
- the erected WEC complies with the submitted documentation,
- technical-safety considerations against the operation exist and
- major defects exist, which would justify a rejection by the buyer / operator.

Scope

It is also possible to carry out the inspection prior to the contractually agreed trial operation (if applicable). Standard with an inspection by **SV-Veltrup** are tests of the:

- compliance of the WEC with documentation (type approval, individual approval, building permit),
- foundation, the tower and the screw connections, especially the structural connections,
- mechanical components including the gearbox,
- electrical components,
- parts and operations relevant to safety and
- rotor blades.(*).

(*) Due to financial reasons, the extensive testing of the rotor blades during the commencement-of-operations inspection are often deferred until the warranty or periodic inspections. These tests are then carried out in a simplified version

(visual spot-checking of exteriors and interiors, where accessible). An extensive inspection of the rotor blades is also optional and can be carried out in the course of the commencement-of-operations inspection.

Comprehensive tests are carried out during the inspection. The functioning of the WEC (including the safety measures) is thoroughly checked.

The cover coating thickness for conservation of important components is determined.

Screw connections are spot-checked with torque wrenches and, in part, with force enhancers.

In addition to this, the alignment of the gearbox and the generator is checked, in the case that this is technically possible and convenient to plan, with the use of a chronometer or laser (laser measurement at an extra charge).

The gearbox is listened to and opened in order to examine the gearing. In case irregularities in the oil are identified, an oil sample is taken in agreement with the client, and a manufacturer-independent analysis of the sample is carried out, in order to test its condition and further suitability. Optional are vibration measurements to check for irregularities in the main bearings, the gearbox or the generator bearings. The participation of the client/operator/investor is possible.

The participation of a manufacturer representative (for example, an operations supervisor) in WEC operations is also convenient.



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Results

The client/operator/investor receives a full-length working status report for each converter plant as an original document and as a PDF (portable document format) file, in which all identified defects are named, described and documented – photographically, for the most part (inspection report). The list with the inspection's findings in the **SV-Veltrup** report is usually used as a list of defects in the record of delivery. The inspection report may be submitted to the manufacturer or builder, in order to claim the removal of identified defects. In addition, it may be submitted to the insurers or potential buyers. If so desired, a certification can be given in order to hand over to the official agency.

The recommended deadlines are also included in the inspection report. Listed separately are major defects which could limit the WEC's usability and, in accordance with the contractual terms, lead to a rejection of the WEC.



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